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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 09/30/2008

Timothy J Oyer Wolf Greenfield & Sacks PC 600 Atlantic Avenue Boston MA 02210 EXAMINER
REDDING, DAVID A

PAPER NUMBER

3723 DATE MAILED: 09/30/2008

 APPLICATION NO.
 FILING DATE
 FIRST NAMED INVENTOR
 ATTORNEY DOCKET NO.
 CONFIRMATION NO.

 09/107,852
 11/07/2000
 Andrey Zaror Jury
 \$1417/004
 9828

 TITLE OF INVENTION: MICROREACTOR
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 APPIN. TYPE
 SMALL ENTITY
 ISSUE FEE DUE
 PUBLICATION FEE DUE
 PREV. PAID ISSUE FEE
 TOTAL FEE(s) DUE
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 nonprovisional
 NO
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THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

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B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

or Fax (571)-273-2885

| INSTRUCTIONS: This f appropriate. All further co indicated unless corrected maintenance fee notification | form should be used for orrespondence including below or directed oth ons. | or tran ig the I ierwise | smitting the ISSU Patent, advance of in Block 1, by (a | | | | | | nould be completed where correspondence address as rate "FEE ADDRESS" for |
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| CURRENT CORRESPONDEN | | | any change of address) | | Note Fee(pape have | : A certificate of s) Transmittal. Thi rs. Each additional its own certificate | mailin s certi l papei of ma | g can only be used fo ficate cannot be used f r, such as an assignme iling or transmission. | r domestic mailings of the or any other accompanying nt or formal drawing, must |
| Timothy J Oyer Wolf Greenfield & 600 Atlantic Aver | & Sacks PC | 72008 | | | I her State addr trans | abo cartify that thi | ic Good | e of Mailing or Transi s) Transmittal is being fficient postage for firs ISSUE FEE address '1) 273-2885, on the d | mission deposited with the United t class mail in an envelope above, or being facsimile ate indicated below. |
| Boston, MA 0221 | U | | | | | | | | (Depositor's name) |
| | | | | | ╙ | | | | (Signature) |
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| APPLICATION NO. FILING DATE | | | | FIRST NAMED INVENTOR | | | ATTORNEY DOCKET NO. CONFIRMATION NO. | | |
| 09/707,852 | 11/07/2000 | | | Andrey Zarur Jur | у | | | S1417/7004 | 9828 |
| TITLE OF INVENTION: | MICROREACTOR | | | | | | | | |
| APPLN. TYPE | SMALL ENTITY | ISS | SUE FEE DUE | PUBLICATION FEE I | OUE | PREV. PAID ISSUE | E PEE | TOTAL FEE(S) DUE | DATE DUE |
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| EXAMIN | of the last of the | | ART UNIT | CLASS-SUBCLASS | | | | | |
| REDDING, I | | | 3723 | 435-289100 | , | | | | |
| | | of TE | | | the patent front page, list | | | | |
| Change of correspondence address or indication of "Fee Address" (37 CFR 1.863). Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. Fee Address' indication (or 'Fee Address' Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required. | | | Correspondence | (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to listed, no name will be printed. | | | | | |
| 3. ASSIGNEE NAME AN | D DECIDENCE DATA | TOP | E DRINTED ON | | _ | | | | |
| PLEASE NOTE: Unler recordation as set forth | ss an assignee is identi in 37 CFR 3.11. Comp | | | data will appear on t T a substitute for filin | he pa g an a | tent. If an assign | | | ocument has been filed for |
| (A) NAME OF ASSIG | NEE | | | (B) RESIDENCE: (C | CITY | and STATE OR C | OUN | (RY) | |
| Please check the appropria | te assignee category or | catego | ries (will not be pr | inted on the patent): | | Individual 🗖 Co | rporat | ion or other private gro | sup entity Government |
| 4a. The following fee(s) ar Issue Fee | e submitted: | | 41 | Payment of Fee(s): A check is enclose | | se first reapply an | y pre | riously paid issue fee | shown above) |
| Publication Fee (No small entity discount permitted) | | | Payment by credit card. Form PTO-2038 is attached. | | | | | | |
| Advance Order - # of Copies | | | The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number | | | | | | |
| 5. Change in Entity Statu | | | | _ | | | | TTTY status. See 37 CI | FR 1.27(g)(2). |
| NOTE: The Issue Fee and interest as shown by the re- | Publication Fee (if requered of the United State | aired) w tes Pate | vill not be accepte ent and Trademark | d from anyone other to Office. | han th | ne applicant; a regi | stered | attorney or agent; or th | e assignee or other party in |
| Authorized Signature _ | | | | | | Date | | | |
| Typed or printed name | | | | Registration No. | | | | | |
| This collection of informat an application. Confidentic submitting the completed this form and/or suggestion Box 1450, Alexandria, Vir Alexandria, Virginia 2231 | tion is required by 37 C ality is governed by 35 application form to the ns for reducing this bur ginia 22313-1450. DO 3-1450. | FR 1.3 U.S.C. USPT den, sh | 11. The informatic 122 and 37 CFR O. Time will vary tould be sent to the SEND FEES OR | on is required to obtain 1.14. This collection is depending upon the e Chief Information C COMPLETED FORM | n or n is esti indiv Office IS TO | etain a benefit by the imated to take 12 r idual case. Any co r, U.S. Patent and THIS ADDRESS | he pub ninute mmen Trader i. SEN | lic which is to file (and s to complete, includin ts on the amount of tir nark Office, U.S. Dept D TO: Commissioner | by the USPTO to process) g gathering, preparing, and ne you require to complete artment of Commerce, P.O. for Patents, P.O. Box 1450, |

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. | | |
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| 09/707,852 | 11/07/2000 | Andrey Zarur Jury | S1417/7004 | 9828 | | |
| 7590 09/30/2008 | | EXAMINER | | | | |
| Timothy J Oyer | | REDDING, DAVID A | | | | |
| Wolf Greenfield & | | | ART UNIT | PAPER NUMBER | | |
| 600 Atlantic Aven | | | 3723 | | | |
| Boston, MA 02210 | | | DATE MARKED OF THE PROPERTY. | | | |

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

| Application No. | Applicant(s) | |
|--------------------|--------------|--|
| 09/707,852 | JURY ET AL. | |
| Examiner | Art Unit | |
| /David A. Redding/ | 3723 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--All claims being allowable. PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative

herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. THIS of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308. This communication is responsive to drawings filed 8/15/08. The allowed claim(s) is/are 166,167,184,188,189 and 199. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) \square All b) ☐ Some* c) ☐ None of the: 1.

Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)). * Certified copies not received: Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE-MONTH PERIOD IS NOT EXTENDABLE. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. CORRECTED DRAWINGS (as "replacement sheets") must be submitted. (a) Including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

Paper No./Mail Date Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

(b) I including changes required by the attached Examiner's Amendment / Comment or in the Office action of

6.

DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s) 1. Notice of References Cited (PTO-892)

- Notice of Draftperson's Patent Drawing Review (PTO-948)

1) hereto or 2) to Paper No./Mail Date

- 3. Information Disclosure Statements (PTO/SB/08).
- Paper No./Mail Date 11/8/04; 2/3/05
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 5. Notice of Informal Patent Application
- 6. Interview Summary (PTO-413), Paper No./Mail Date
- 7. T Examiner's Amendment/Comment
- 8. X Examiner's Statement of Reasons for Allowance

/David A Redding/

Primary Examiner, Art Unit 3723

| U.S. Patent and Trademark Office |
|----------------------------------|
| PTOL-37 (Rev. 08-06) |

9. ☐ Other

Application/Control Number: 09/707,852

Art Unit: 3723

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the 35 U.S.C. 112, second paragraph rejection has been withdrawn upon a review of the specification which describes the relationship between the reactor 10 having inlets (figure 3) and outlet 82 and a fluid pathway in-between, at least one reaction unit 16 with a chamber with a surface suitable for cultivating cells, a membrane 34,36 defining a wall of the pathway and an enclosure (figure 6) proximate the membrane.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /David A. Redding/ whose telephone number is 571-272-1276. The examiner can normally be reached on Mon.-Fri. 6:00 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David A Redding/ Primary Examiner Art Unit 3723

DAR